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Nature in a bottle

# Soil Washing Machine

Revolutionize soil remediation effortlessly and affordably with our advanced bio-remediation agent. Say goodbye to contaminated soils, drilling mud, and cuttings swiftly and effectively.

*Proudly presented by Advance Alliance in collaboration with R&D Mechanical Technical Services.*





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## **SYSTEM COMPONENTS:**

**OUR SYSTEM IS FULLY CUSTOMIZABLE FOR YOUR NEEDS & REQUIRED FUNCTIONS**

- Multi cell oil extraction assembly
- Cuttings drying centrifuge skid assembly
- Oil and water separator MS 450 Boss
- Produced and flow back water treatment (WRU)

*Note: The systems listed can be used independently or in combination depending on the extent of the remediation work to be completed.*



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# **SOIL REMEDIATION SKID**

## **RECLAMATION AND PURIFICATION PROCESS**

- Load contaminated soil into the Soil Remediation System
- Simultaneously mix EPA approved biodegradable solution
- Shear hydrocarbons from soil with a patented process
- Return remediated soil to site
- Can Remediate 17657 cubic feet of contaminated soil in 12 hours

*Cost analysis determines if hydrocarbons are recovered or destroyed.*

**AN UNBEATABLY COST-EFFECTIVE, SIMPLE AND RAPID REMEDIATION SYSTEM**

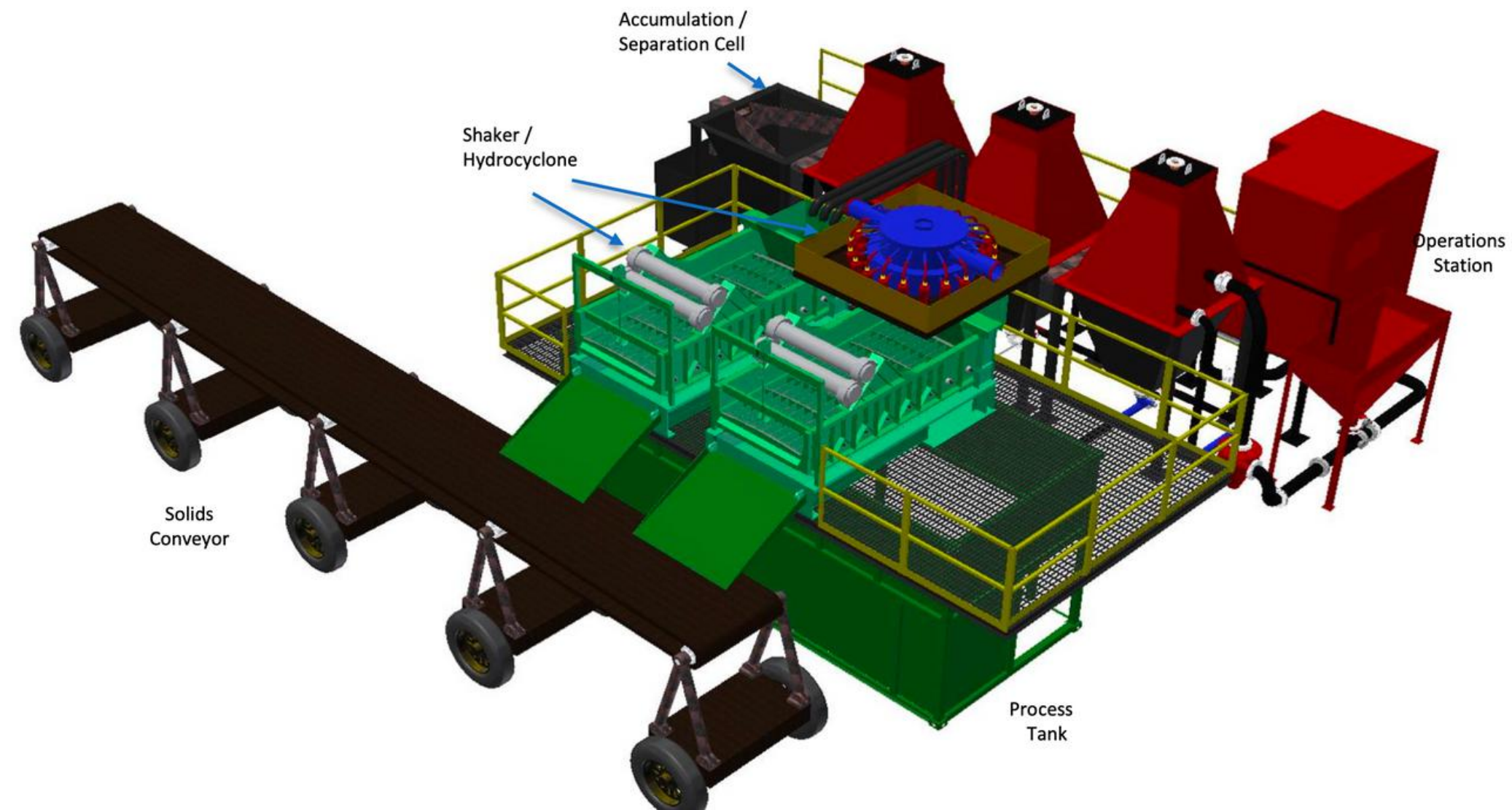


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# SOIL REMEDIATION UNIT (SRU)



**AN UNBEATABLY COST-EFFECTIVE, SIMPLE AND RAPID REMEDIATION SYSTEM**

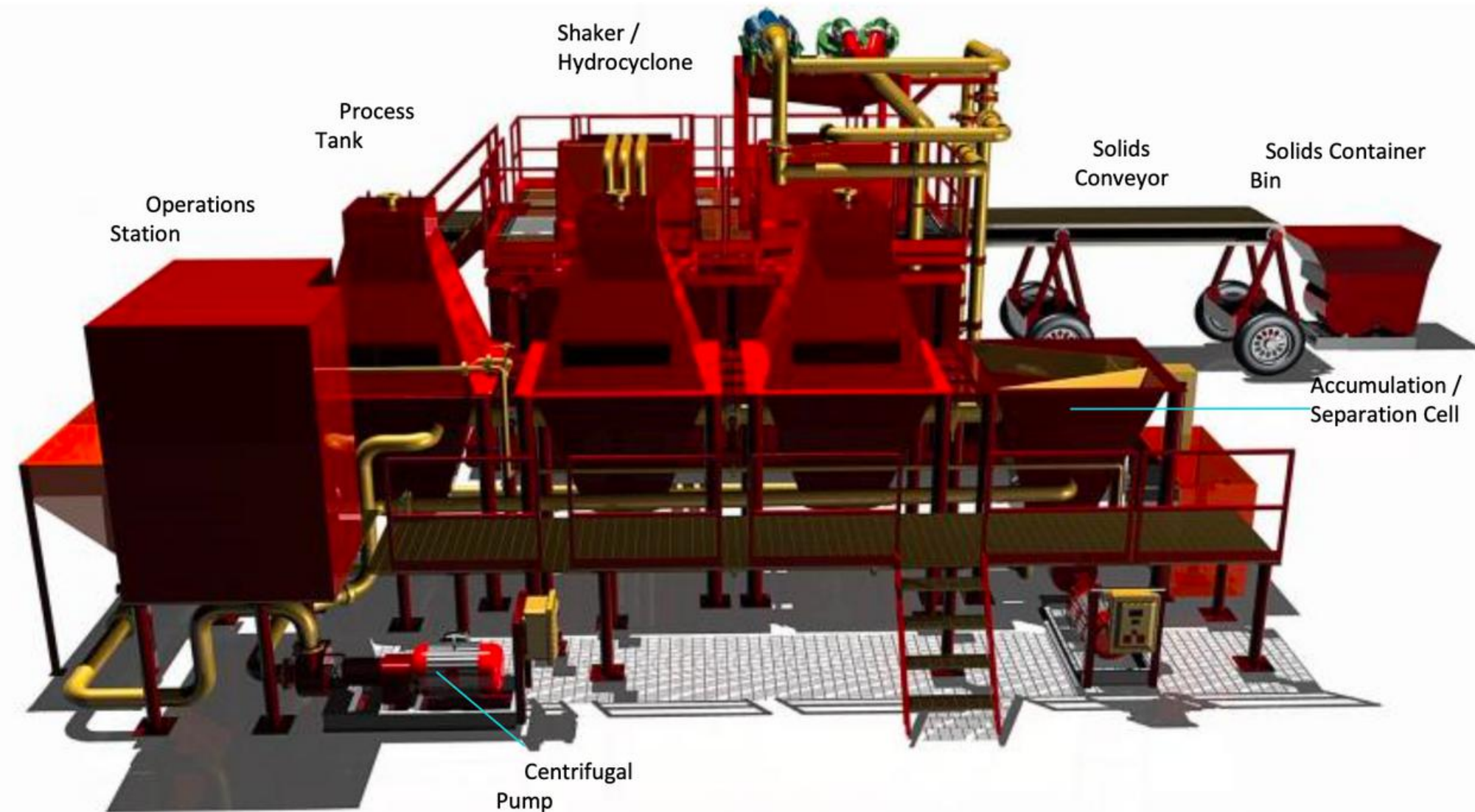


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# OIL SAND RECOVERY & REMEDIATION SYSTEM



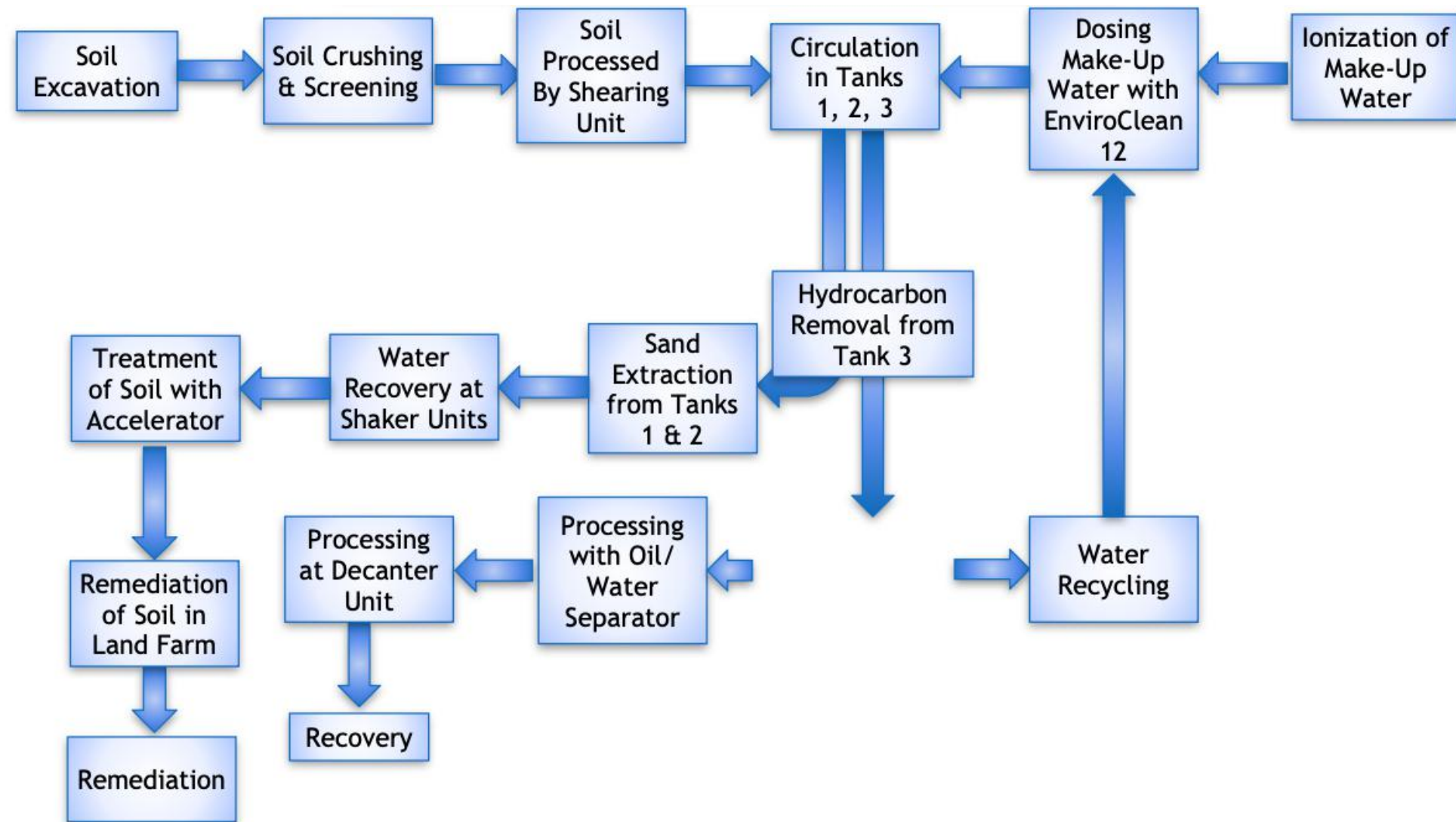
A mobile, modular unit that incorporates a combination of mechanical and bio-chemical technologies for solid / fluids separation and complete hydrocarbon remediation of soil.

*The low operating costs, and ability to completely remove hydrocarbons is UNMATCHED in the industry.*

**AN UNBEATABLY COST-EFFECTIVE, SIMPLE AND RAPID REMEDIATION SYSTEM**



# SOIL REMEDIATION & OIL RECOVERY FLOW PROCESS



*Eliminate and recover hydrocarbons in soil, and return natural soil to site in minutes.*

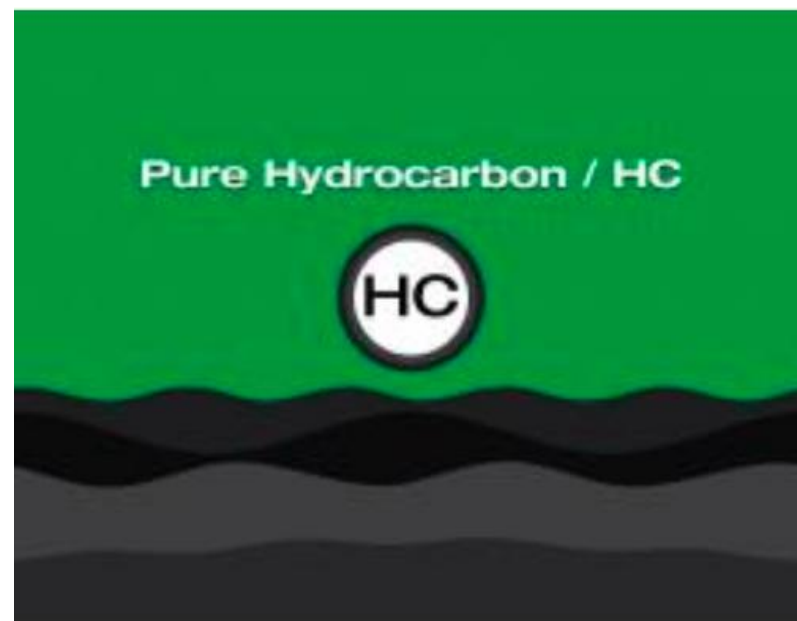


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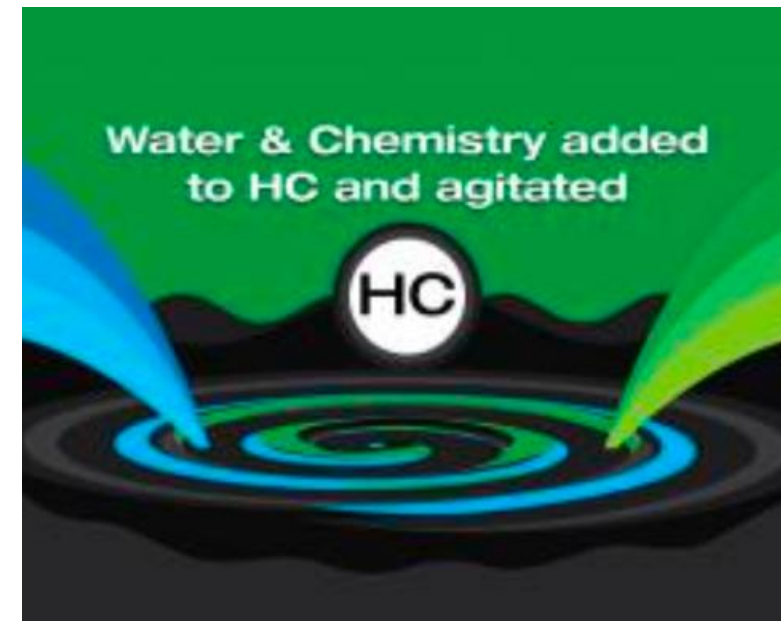


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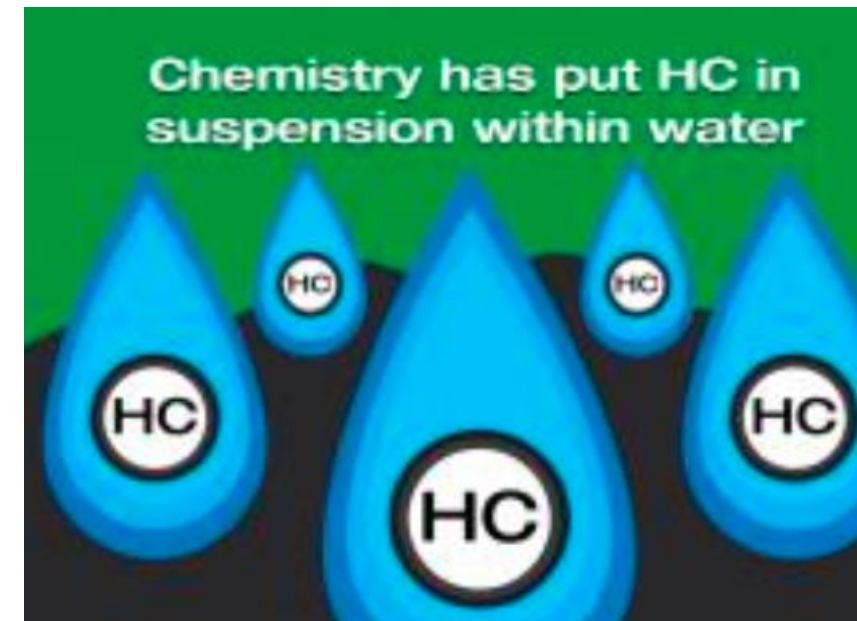
# CHEMICAL PROCESS



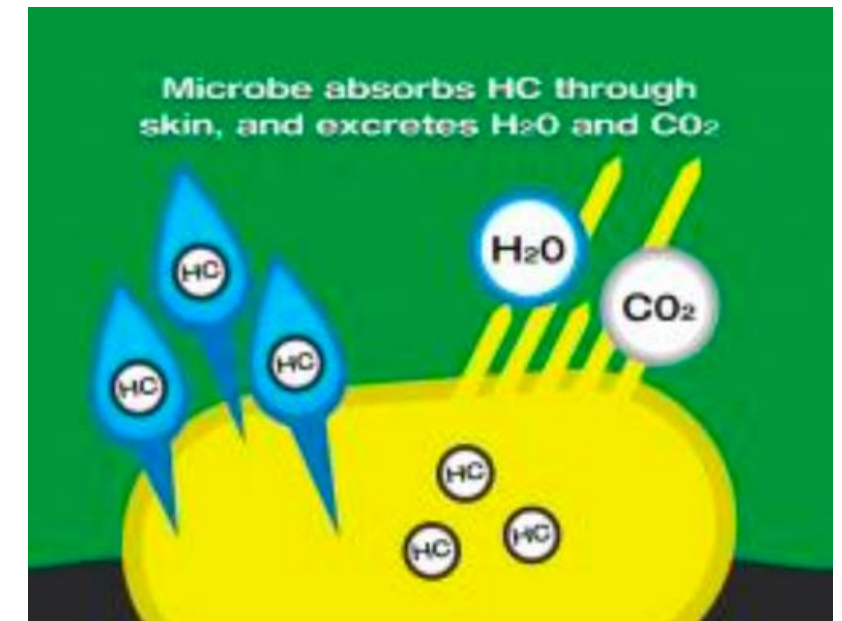
**STAGE 1**



**STAGE 2**



**STAGE 3**



**STAGE 4**

**AN UNBEATABLY COST-EFFECTIVE, SIMPLE AND RAPID REMEDIATION SYSTEM**



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# **RAPID, EFFECTIVE REMEDIATION**

**OIL CONTAMINATED SAND CLEANING**



*Average run time 2-3min based on the feeder capacity*





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# WATER RECLAMATION-REUSE: INJECTION/ PURIFICATION

## INDUSTRIAL ISSUES:

1. Ponds destined for production water may contain very large volumes (over 1 MMbls) of fluids, mostly water & other contaminants (chlorides, metals, etc).
2. Where production water cannot be re-injected, existing ponds are needed for temporary disposal. A solution for the treatment/disposal of ongoing production water must be incorporated in the integral solution to stop discharge into existing ponds.
3. There is an ongoing need for large volumes of reinjection water as well as clean reused water for ongoing drilling operations.



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# WATER RECLAMATION-REUSE: INJECTION/ PURIFICATION

## OUR SOLUTION:

- High throughput
- In-situ treatment (in the "local or original place" - no need to remove contaminants for further processing at another site).
- Oil recovery
- Conditioning of water for reinjection - incorporation of soil (backfill)
- Clean tailings can be disposed of in a landfill or agricultural



## REMEDICATION OF SOIL BENEATH THE PONDS (B):

- Where damage has reached the water table, the additional removal of hydrocarbon will be required to eliminate the migration of the hydrocarbon associated contaminants.
- For this, Advance Alliance will use a combination of soil vacuum extraction (SVE) and air sparging (AS).
- An SVE system uses a vacuum to remove air and entrained hydrocarbons from soil above the water table.
- An AS system injects air into the water table; the injected air is removed by the SVE system carrying the hydrocarbon contaminants.
- This combination is widely used as a remediation treatment, and is proven to be the most effective for most geographic locations.

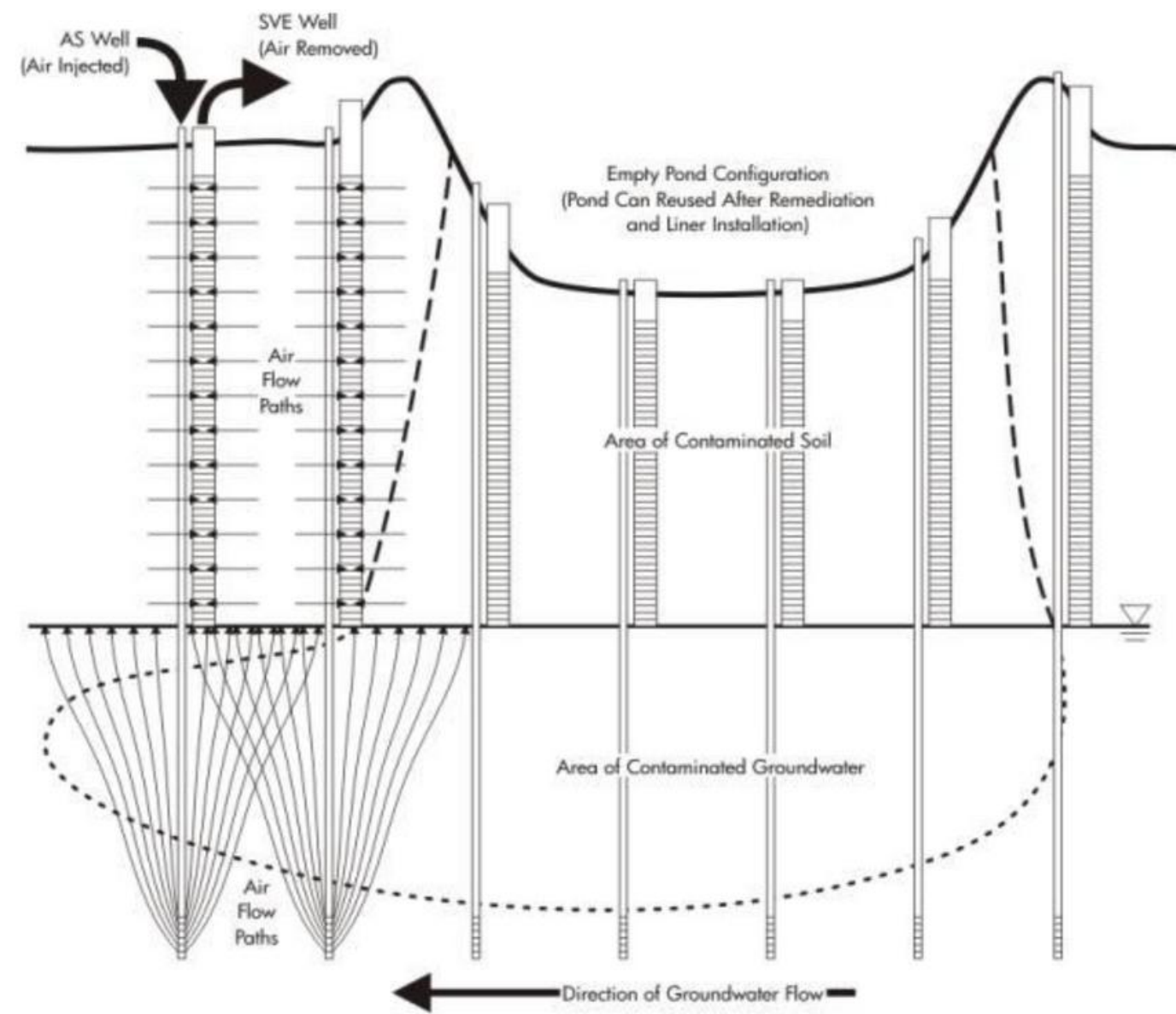


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## REMEDIATION OF SOIL BENEATH THE PONDS (B)



This technology has been used successfully in restoring groundwater quality at thousands of hydrocarbon-impacted sites all over the world, including VOCs adsorbed to soil below the water table and within the capillary fringe, for almost two decades.



# Summary

## SEPARATION OF OIL/WATER:

- After oil and water separation, 99.9% crude will be recovered, or can be remediated.
- Crude oil can be sold based on its current grade; ie asphalt grade.
- Water will receive treatment in our system for re-injection, or incorporation into water streams.
- Solid waste will be non-detectable for any contaminants and can be disposed of in a landfill or injected back into the well. Contaminated soil is washed and treated in situ for reincorporation into the ground soil.
- Bioremediation treatment will ensure elimination of Hydrocarbon components.

***OUR SYSTEM IS THE MOST EFFICIENT AND COST EFFECTIVE MEANS OF ON SITE REMEDIATION***

**Improve Productivity | Boost Profits | Environmentally Friendly**



## REFERENCE LIST:

- AVISPA
- BLACKSTONE
- BLUE RIBBON TECHNOLOGY
- BROWNFIELD LLC
- CAELUS ENERGY ALASKA, LLC
- CARLSEN
- DRILLMEC
- EXMAR OFFSHORE
- F.E. BICKFORD AND ASSOCIATES
- GENESIS GROUP
- HELMERICH AND PAYNE INT. DRILLING CO.
- HYDRO-FIN, LLC.
- IMPERIAL PETROLEUM, INC.
- INDRILL SUPPLY OF TEXAS, INC.
- LANKA MINERALS & CHEMICALS (PVT) LTD
- MRC
- NABORS OFFSHORE CORPORATION
- PATRIOT COAL SERVICES
- PFP TECHNOLOGY
- PRECISION ADDITIVES
- PRIME ECO GROUP
- RALOW SERVICES LLC
- RAY'S CONTRACTING LTD.
- RIG SOLUTIONS LLC
- ROUGHNECK EQUIPMENT
- ROUGHNECK LEASING LLC
- SCHLUMBERGER
- SHELL OIL CO.
- SNW FABRICATION LLC
- STAMPEDE OIL SANDS INC.
- SUREFIRE INDUSTRIES USA, LLC
- TANNER SERVICES, LLC
- TEQNISOLUTIONS LLC
- TERRAMER
- TEXAS TEA RECLAMATION
- TNT INDUSTRIAL
- TRI-COR-C
- VENTURE CHEMICALS
- VERDE TECHNOLOGIES LLC
- WALTON DEVELOPMENT AND MANAGEMENT



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# Contact Us

For any questions or clarifications on our presentation.